Twenty-first Volume of "Natural Families of Plants" Appears

Engler, A.: Die natürlichen Pflanzenfamilien. 11 Band, Musci (Laubmoose) 2 Hälfte redigiert von V. F. Brotherus und 21 Band, Parietales und Opuntiales redigiert von E. Gilg. Leipzig, Verlag von Wilhelm Engelmann, 1925.

This note is written to publish the fact that the second part of the moss volume of the "Natural Families of Plants" has appeared, and should be added to the library of moss lovers. The twenty-first volume describes the characteristics of 33 families and their genera of flowering plants comprised in the orders *Parietales* and *Opuntiales*. The typography and the illustrations of these volumes leave little to be desired.

John W. Harshberger.

PROCEEDINGS OF THE CLUB

Meeting of April 29, 1925.

The meeting of this date was held at the Museum Building of the New York Botanical Garden. Mr. Charles Greenberg, 907 Fox Street, Bronx, N. Y. C., was elected to membership, and the resignation of Mr. Charles Dreyer, 147 East 55th Street, Brooklyn, was accepted with regret.

For the scientific part of the program, Dr. N. L. Britton exhibited a fossilized walnut which had been presented to him by a contractor making excavations in western Porto Rico. The nuts were found at a depth of about 60 feet in a lignitic layer of Araciba limestone, perhaps of tertiary origin. The nuts resembled somewhat the existing Juglans, but are smaller with the ridges less pronounced. They certainly indicate the existence of Juglans in the West Indies in very ancient times. This brings up the interesting question as to the place of origin of the genus Juglans, whether the new or old world.

The next paper was by Dr. A. B. Stout, entitled, "Recent studies of flower behavior of avocados." This tropical fruit, sometimes called alligator pear, is destined some day to become a great fruit crop. It is very nutritious, being rich in proteid and oil. The conditions for its cultivation in Florida and California are favorable.

With very few exceptions, all avocados have perfect flowers. Each flower normally has two distinct periods of opening: in the first opening the pistil is ready to be pollinated, and in the second the pollen is being shed. There is an interval of 12, 24, or 36 hours between these openings depending upon the weather conditions. As is evident, such a dichogamous condition prevents self-pollination. But the avocado goes a step further: its flowers open synchronously, i. e. on one variety only one kind of organ (stamen or pistil) matures at one time, e. g. the stamens in the morning, the pistils in the evening, or late afternoon. This prevents close-pollination. Varieties fall into two main groups with respect to the daily sequence of opening. In one group first-period flowers are open in the forenoon, and second-period flowers are open in the afternoon. In the other group, conditions are the reverse: the second-period flowers are open in the forenoon and the first-period ones are open in the afternoon. The avocados are thus most decidedly adapted for cross-pollination between members of these two groups, and to provide for proper pollination such varieties should be interplanted in commercial plantings.

The recent studies in Florida were made in cooperation with the Bureau of Plant Industry, The Florida Avocado Association, and the Daüe County Farm Bureau. The flower behavior of 124 named varieties and seedlings has been determined with special reference to the interplanting which will favor fruit production. The report of this investigation will soon be published in detail.

The next paper was by Dr. H. A. Gleason, and was entitled "The Lobeliaceae of South America." Specimens were shown and described of South American representatives of the large and important genera Burmeistera, Centropogon, and Siphocampylus. Dr. Gleason showed how the species clearly separate out into several groups depending on the character of the fruit, the nature of the inflorescence, the shape of the corolla, and the appendages of the two lower anthers.

Arthur H. Graves,
Secretary.

Meeting of May 12, 1925.

This meeting was held at the American Museum of Natural History. The following were elected to membership:

Prof. F. K. Butters, University of Minnesota, Minneapolis, Minnesota.

Miss Mary E. Wood, Johnson Hall, 411 West 116th Street, New York, N. Y.

Dr. Sheppard Shapiro, Montefioro Hospital, Gunhill Rd. and Bainbridge Avenue, New York, N. Y.

The program of the evening consisted of an illustrated lecture by Dr. G. R. Wieland of Yale, entitled "The early Mesozoic flowering plants," which was illustrated by lantern slides and specimens. Dr. Wieland confined himself chiefly to the evidence of floral structures in the older Mesozoic, accumulated since the cycadeoid flower buds were first discovered by him in 1899. He recited some of the history of discovery in the petrified cycadeoid series, and then gave his reasons for calling the group and its allies the hemi-cycadales, or half-cycads;—that is, because of the vegetative likeness to the existing cycads, and the floral antithesis in which flowers of the one group are contrasted with cones of the other.

The petrified cycadeoids were sketched from slides showing stem, leaf and flower. Attention was called to the fact that there is a great stem-bearing stratum lying at the top of a mesa in the southern Black Hills "Rim" near Minnekahta, now set aside as the "Cycad National Monument." Here is perhaps the world's greatest deposit of semi-gem stone; for the polished surfaces and thin sections are of a uniform and uncommon beauty.

A view was given of a wedge cut from the historic Dresden cycad, found in 1753 and now about to be sectioned for the first time. The very considerable floral variation within the cycadeoids was illustrated. The most typical flowers are not those of the petrified stems, but those borne on related types with small, much branched stems. Such are the *Williamsoniella* and *Wielandiella*. The smaller flowered cycadeoids, along with their relatives formed in all lower Mesozoic time a dominant group including thousands of species. One of the most striking assemblages of this vegetation is that collected by Dr. Wieland in the Liassic of Southern Mexico.

The question whether the cycadeoids had early relatives leading toward the angiosperms, or of a possible angiospermous relationship through reduction of floral parts, was mentioned tentatively. It was not considered quite certain that the larger cycadeoid, and likewise some magnolia flowers, may not show a certain amount of secondary gigantism.

The recently discovered angiosperm group Caytoniales of the mid-Jurassic of the Yorkshire Coast, which at last definitely extends the record below Cretaceous time, was considered in detail, and it was shown that the group occurs earlier in the Mexican Lias. It was pointed out why fossil flowers are so rarely found or recognized, and it was concluded that the angiosperms did not likely arise later than the Permian.—Dr. Wieland believes that two of the most promising regions in which to explore for evidence bearing on early, or intermediate angiospermous types, are the many Rhätic outcrops in Argentina and Lias of Mexico. He has collected in both.

ARTHUR H. GRAVES,
Secretary

MEETING OF MAY 27, 1925.

This was a joint meeting of the Wild Flower Preservation Society of America and the Torrey Botanical Club—the regular annual affair in the interests of the conservation of our native plants, held at the Museum Building of the New York Botanical Garden. Mr. Gaylord Johnson, 292 Lincoln Place, Brooklyn, was unanimously elected to membership in the Torrey Botanical Club.

Dr. Benedict, representing the committee appointed last year to secure legislation for the protection of our native plants, reported that Mr. Louis Marshall of New York City drew up two laws which were proposed in February of this year, but did not pass, the chief objection being that they were too drastic. The first was an amendment to the penal code which made more stringent and specific the penalty for removing wild plants from private lands. The second amended the State Conservation law in two ways: first by authorizing the State Commissioner of Conservation to control the picking of plants in State parks, and the second, by modifying the private park section, encouraged the

establishment of sanctuaries for the propagation and protection of wild plants. An entering wedge has, however, been finally formed in the measure for the protection of trailing arbutus on public lands, which became a law, April 1, 1925.

Mrs. Britton brought up the subject of the acquisition and preservation of the Cook Forest area in Pennsylvania, one of the largest remaining areas of primeval white pine. This movement is being furthered by the Ecological Society of America through its committees on preservation of natural conditions. On the motion of Dr. R. A. Harper it was the sense of the meeting that the societies represented endorse this movement and that Mrs. Britton, the Secretary of the Wild Flower Preservation Society of America, be empowered to draft a resolution to this effect.

Dr. N. L. Britton spoke of the publication of the Naturalists' Guide, which should be a great stimulus to the preservation of natural areas.

Mr. Norman Taylor, in speaking of the new movement for additional State Park lands, stated that it was on his recommendation that part of Montauk and also an area in Hempstead Plains between Hicksville and Syosset were included in the plans for state parks on Long Island. The general park program for Long Island has aroused opposition from two main sources:

1. From the interested and usually wealthy owners of adjacent property.

2. From those who feel that the acquisition of this land may result in the destruction of vegetation rather than in its conservation.

After some discussion for and against, the motion was passed without dissenting vote, that it was the sense of the meeting that, in so far as the establishment of these parks makes for the preservation of individual plants or vegetation, the movement has the unqualified approval and willingness to cooperate of the Wild Flower Preservation Society of America and the Torrey Botanical Club. The secretaries of the two societies were authorized to send a resolution to Mr. Moses of the Park Commissioners, to the effect that they are in sympathy with his park program and wish to do anything they can to support it.

Arthur M. Graves,
Secretary

Meeting of October 13, 1925

The meeting was held at Barnard College. The following new members were elected:

Miss Fanny A. Cook, Crystal Springs, Mississippi.

Prof. John M. Coulter, Boyce Thompson Institute, Yonkers, New York.

Mrs. J. V. Johnson, 41 Sterling Place, Brooklyn, N. Y.

Dr. L. O. Kunkel, Boyce Thompson Institute, Yonkers, N. Y.

Dr. W. J. V. Osterhout, Rockefeller Institute, 67th Street and Avenue A, New York, N. Y.

Mrs. Charlotte B. Stimpson, 1120 Fifth Avenue, New York, N. Y.

Mr. Clark Williams, 160 Broadway, New York, N. Y.

The program of the evening consisted in the relation by the various members of their experiences and collections during the summer. Dr. R. A. Harper spoke of his trip to the University of Wisconsin and remarked upon the notable advances there in the way of making museum material attractive, especially that used for class demonstrations. Particularly was this so with regard to the plant disease material in which the natural colors were preserved with remarkable accuracy. Dr. Hazen told of his visit to London where he spent several days in bibliographical work and attended a meeting of the Linnaean Society. From there he went to Norway to study the Red Snow. He exhibited a specimen which was apparently *Chlamydomonas lateritia* Lagerheim on a birch twig making a bright red coloration. The alga was only in the resting stage so that it was impossible to identify it with certainty as Chlamydomonas. He also spoke of the interesting arctic and alpine flora; in the more northern regions the alpine flora occurring at low elevations. He attended the Fourth International Plant Geography Excursion. Mr. Beale showed specimens of sphagnums, hepatics, and mosses recently collected in a marl pit near Farmingdale, New Jersey. The hepatics grew very vigorously on this limy soil. During this summer he found in the Swartzwood Lake region several patches of Leucobryum in fruit, and with Mrs. Beals collected many slime molds. Dr. Rydberg described his trip in a motor car through the Southern Appalachians. Among the regions visited were Panther and Snowy Mts. in West Virginia, and Grand-

father's Peak, Mt. Mitchell, Craggy Mts., Pisgah and Balt Mts. Many collections were made. An Aconitum, reported to him as Larkspur, was found which was poisoning cattle. Mrs. G. P. Anderson reported on her work on lichens—a full account of which will be published later in Torreya. The secretary mentioned the collection of *Linnaea borealis* on the top of Black Head in the Catskills, and also *Ribes lacustre* near the top of the same mountain. These collections were made on one of the trips of the Torrey Club during the summer.

Arthur H. Graves,
Secretary

NEWS NOTES

Dr. H. A. Gleason of the New York Botanic Gardens left on Jan. 14 for Porto Rico. He is to work in cooperation with Dr. Melville T. Cook in studying the plants of Porto Rico and their distribution. Later in the season Dr. and Mrs. N. L. Britton will join Dr. Gleason in the work.

A recent notice in the newspapers tells us that the State of Washington has joined the movement toward protecting wild flowers and has made it a misdemeanor to cut any shrubs or wild flowers within 300 feet of the public highway without permission of the owner of the land.

This fall the newspapers of New York City were full of accounts of large fields of hemp, *Cannabis sativa*, grown in or about the city for the sake of furnishing the narcotic drug hasheesh. They claimed that the hemp had been planted by a group of Mexicans, some of it in City Parks, and that they gathered the leaves at night and prepared and peddled the drug. According to the accounts, the authorities found several of these fields and destroyed a large number of the plants. (The drug is prepared from the flowering tops, chiefly of the staminate plants, not from the leaves.)

At the meeting of the American Association for the Advancement of Science held during Christmas week at Kansas City, Dr. Liberty Hyde Baily was elected president of the Association and also of the Botanical Society of America.